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JUNE A HAWLEY, ADMINISTRATIVE GRANTS OFFICE
DEPARTMENT OF THE NAVY
OFFICE OF NAVAL RESEARCH
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410 UNIVERSITY DISTRICT BUILDING
1107 N E 45TH STREET
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SUBJECT: Final Closing Documents
Grant No. N00014-90-J-1442
University of Utah Account No. 5-28210

Dear Ms. Hawley:

We have enclosed one (1) copy of the final technical report for the project entitled "1990 WINTER CONFERENCE ON NEUROBIOLOGY OF LEARNING AND MEMORY" which was under the direction of Dr. Raymond P. Kesner, Department of Psychology.

If further information is required, please advise.

Sincerely,

Ray M. Nilsson

Ray M. Nilsson
Manager, Grants & Contracts

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cy: Dr. Raymond P. Kesner
Joel L. Davis, ONR, 1 copy of report
Defense Technical Information Center 1 copy of report

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Final Report

The fourteenth annual Neurobiology of Learning and Memory conference was held in Park City, January 13-16, 1990. The conference was organized by Raymond Kesner, Jim McGaugh, Aryeh Routtenberg, Larry Squire, and Stuart Zola-Morgan. The conference was well attended with 70 scientists from all parts of the United States as well as 20 graduate and/or postdoctoral students.

The topics that were covered included 1) a "data blitz" which was led by Stuart Zola-Morgan. The data blitz was designed to provide people the opportunity to tell the group what is most exciting, so that the information can be used as a basis for further discussion throughout the days of the conference. Each of thirty people presented their latest exciting results for a 5 minute period. 2) "The role of the hippocampal formation in learning and memory" which was led by Stuart Zola-Morgan and with Rob Sutherland, Larry Squire and Dan Schacter as major participants. The session dealt with the following questions. What are the available theoretical frameworks for understanding the role of the hippocampal formation in memory? How well do they integrate the wide range of data relating the hippocampal formation to learning and memory? 3) "Comparisons between animal models of memory disorders and human amnesia" was led by Paul Solomon with Paul Gold, Mark Moss, Gordon Winocur and David Olton as major participants. The session dealt with the following questions. What are the requirements for a good animal model? What do the tasks have in common that are used to evaluate memory in various species, including humans? Is it possible to have truly homologous tasks in animals and humans? 4) "Plasticity and memory in the olfactory system" was led by Paul Gold with Peter Brunges, Michael Leon, Warren Hall and Ursula Staubli as major participants. The session dealt with the following

questions. What do we know about the nose, and what can we learn from the nose about memory? Emphasis was on the properties of olfactory processing (behavioral parameters of olfactory perception and discrimination, anatomy of primary and higher order olfactory processing), developmental aspects of olfaction, and olfaction as an approach to memory (olfactory paradigms, paired-associate learning, and physiological properties of memory.). 5)

"Patterns of activity in the hippocampal system: Relevance to memory formation" was led by Gyorgy Buzsaki with Howard Eichenbaum, Steve Fox as major participants. The session dealt with a focus on the subcortical and cortical control of the firing patterns and population behavior of hippocampal neurons. The major goal of this session was to relate naturally occurring physiological patterns to the requirements of synaptic plasticity and discuss how and when events important for memory trace formation may occur in the hippocampus. 6) "How close are we to finding a drug to enhance human memory?" was led by Jim McGaugh with Elkan Gamzu, Peter Davies as major participants. The session dealt with a comparison of basic research and clinical research findings, issues and points of view; retarding the decline of memory versus enhancing normal memory; efficacy in animals versus humans.

All of the sessions of the conference were well attended and resulted in extensive discussion within each session as well as discussion throughout the conference period. It is hoped that many new ideas were generated as a result of the many excellent presentations and the ensuing discussions.